CLAIMS

We claim:

1. A targeting construct comprising:

(a) a first polynucleotide sequence homologous to a protein phosphatase 2C gene;

(b) a second polynucleotide sequence homologous to the protein phosphatase 2C gene; and

(c) a selectable marker.

2. The targeting construct of claim 1, wherein the targeting construct further comprises a screening marker.

3. A method of producing a targeting construct, the method comprising:

(a) providing a first polynucleotide sequence homologous to a protein phosphatase 2C gene;

(b) providing a second polynucleotide sequence homologous to the protein phosphatase 2C;

(c) providing a selectable marker; and

(d) inserting the first sequence, second sequence, and selectable marker into a vector, to produce the targeting construct.

4. A method of producing a targeting construct, the method comprising:

(a) providing a polynucleotide comprising a first sequence homologous to a first region of a protein phosphatase 2C gene and a second sequence homologous to a second region of a protein phosphatase 2C gene;

(b) inserting a positive selection marker in between the first and second sequences to form the targeting construct.

5. A cell comprising a disruption in a protein phosphatase 2C gene.

6. The cell of claim 5, wherein the cell is a murine cell.

7. The cell of claim 6, wherein the murine cell is an embryonic stem cell.

8. A non-human transgenic animal comprising a disruption in a protein phosphatase 2C gene.

9. A cell derived from the non-human transgenic animal of claim 8.

10. A method of producing a transgenic mouse comprising a disruption in a protein phosphatase 2C gene, the method comprising:

(a) introducing the targeting construct of claim 1 into a cell;

(b) introducing the cell into a blastocyst;

(c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and

(d) breeding the chimeric mouse to produce the transgenic mouse.

11. A method of identifying an agent that modulates the expression of a protein phosphatase 2C, the method comprising:

(a) providing a non-human transgenic animal comprising a disruption in a protein phosphatase 2C gene;

(b) administering an agent to the non-human transgenic animal; and

(c) determining whether the expression of protein phosphatase 2C in the non-human transgenic animal is modulated.

12. A method of identifying an agent that modulates the function of a protein phosphatase 2C, the method comprising:

(a) providing a non-human transgenic animal comprising a disruption in a protein phosphatase 2C gene;

(b) administering an agent to the non-human transgenic animal; and

(c) determining whether the function of the disrupted protein phosphatase 2C gene in the non-human transgenic animal is modulated.

13. A method of identifying an agent that modulates the expression of protein phosphatase 2C, the method comprising:

(a) providing a cell comprising a disruption in a protein phosphatase 2C gene;

(b) contacting the cell with an agent; and

(c) determining whether expression of the protein phosphatase 2C is modulated.

14. A method of identifying an agent that modulates the function of a protein phosphatase 2C gene, the method comprising:

(a) providing a cell comprising a disruption in a protein phosphatase 2C gene;

(b) contacting the cell with an agent; and

(c) determining whether the function of the protein phosphatase 2C gene is modulated.

15. The method of claim 13 or claim 14, wherein the cell is derived from the non-human transgenic animal of claim 8.

16. An agent identified by the method of claim 11, claim 12, claim 13, or claim 14.

17. A transgenic mouse comprising a disruption in a protein phosphatase 2C gene, wherein the transgenic mouse exhibits at least one of the following phenotypes: a stimulus processing deficit and abnormal startle response.

18. The transgenic mouse of claim 17, wherein the stimulus processing deficit is decreased prepulse inhibition with a 90dB and 100dB prepulse.

19. A method of producing a transgenic mouse comprising a disruption in a protein phosphatase 2C gene, wherein the transgenic mouse exhibits at least one of the following phenotypes: a stimulus processing deficit and abnormal startle response, the method comprising:

(a) introducing a protein phosphatase 2C gene targeting construct into a cell;

(b) introducing the cell into a blastocyst;

(c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and

(d) breeding the chimeric mouse to produce the transgenic mouse comprising a disruption in a protein phosphatase 2C gene.

20. A cell derived from the transgenic mouse of claim 17 or claim 19.

21. A method of identifying an agent that ameliorates a phenotype associated with a disruption in a protein phosphatase 2C gene, the method comprising:

(a) administering an agent to a transgenic mouse comprising a disruption in a protein phosphatase 2C gene; and

(b) determining whether the agent ameliorates at least one of the following phenotypes: stimulus processing deficit and abnormal startle response.

22. A method of identifying an agent that modulates protein phosphatase 2C expression, the method comprising:

(a) administering an agent to the transgenic mouse comprising a disruption in a protein phosphatase 2C gene; and

(b) determining whether the agent modulates protein phosphatase 2C expression in the transgenic mouse, wherein the agent has an effect on at least one of the following behaviors: stimulus processing and startle response.

23. A method of identifying an agent that modulates a behavior associated with a disruption in a protein phosphatase 2C gene, the method comprising:

(a) administering an agent to a transgenic mouse comprising a disruption in a protein phosphatase 2C gene; and

(b) determining whether the agent modulates stimulus processing or startle response.

24. A method of identifying an agent that modulates protein phosphatase 2C gene function, the method comprising:

(a) providing a cell comprising a disruption in a protein phosphatase 2C gene;

(b) contacting the cell with an agent; and

(c) determining whether the agent modulates protein phosphatase 2C gene function, wherein the agent modulates a phenotype associated with a disruption in a protein phosphatase 2C gene.

25. An agent identified by the method of claim 21, claim 22, claim 23, or claim 24.